

CITY OF WICHITA PAVEMENT PRESERVATION PROGRAM



Public Works & Utilities
August 2013



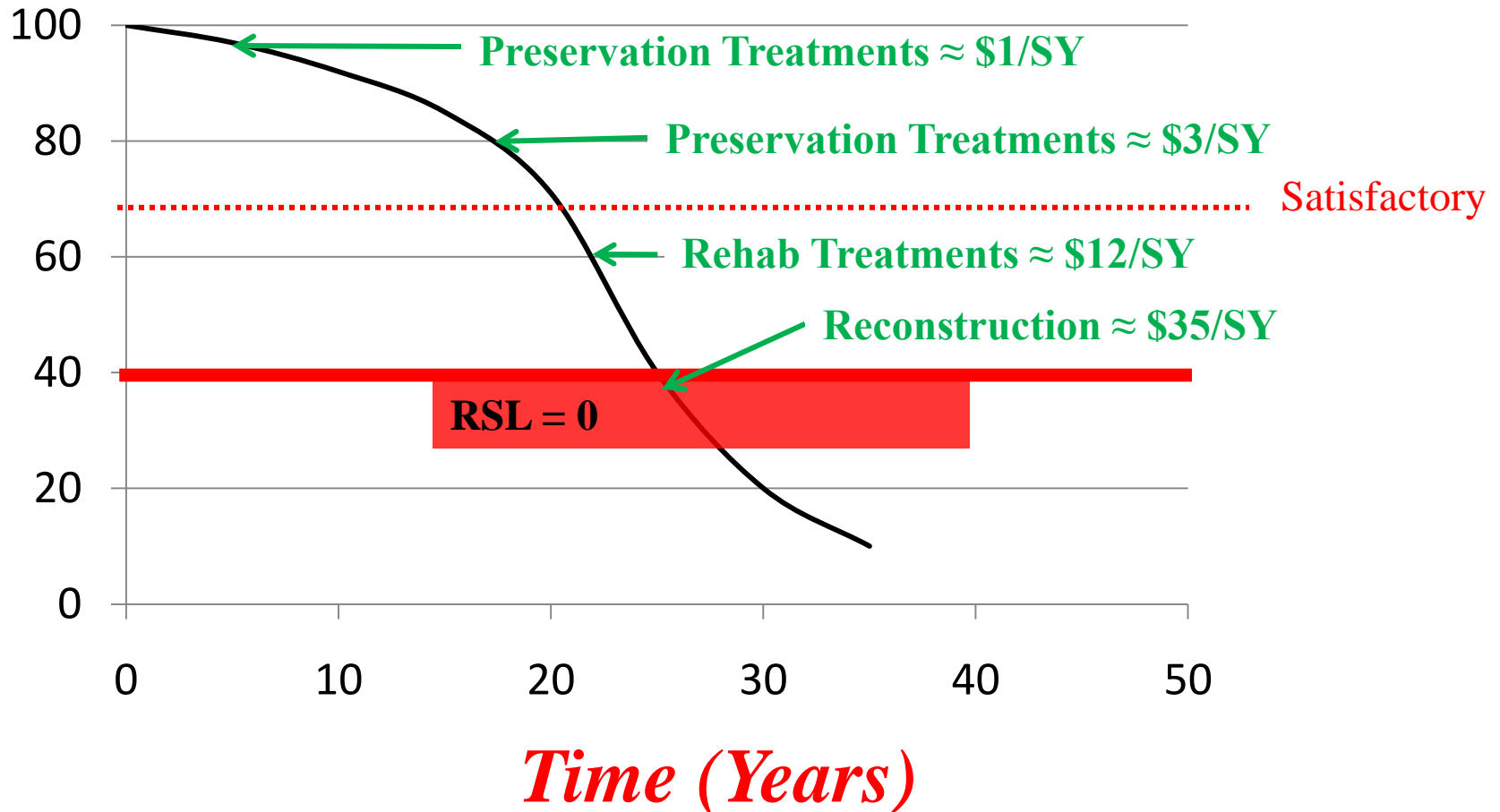
Pavement Preservation Program Approach

- Condition ratings: PCI $\Rightarrow \Rightarrow \Rightarrow$ ROI
- 2011 – 2012 CMP Transition
- 2013 & 2014 CMP Pilot Projects
- CMP based on ROI: 2015 (and beyond)



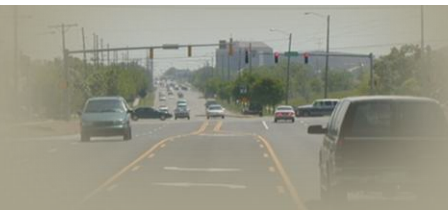
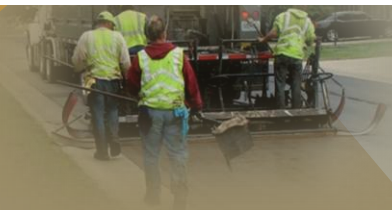
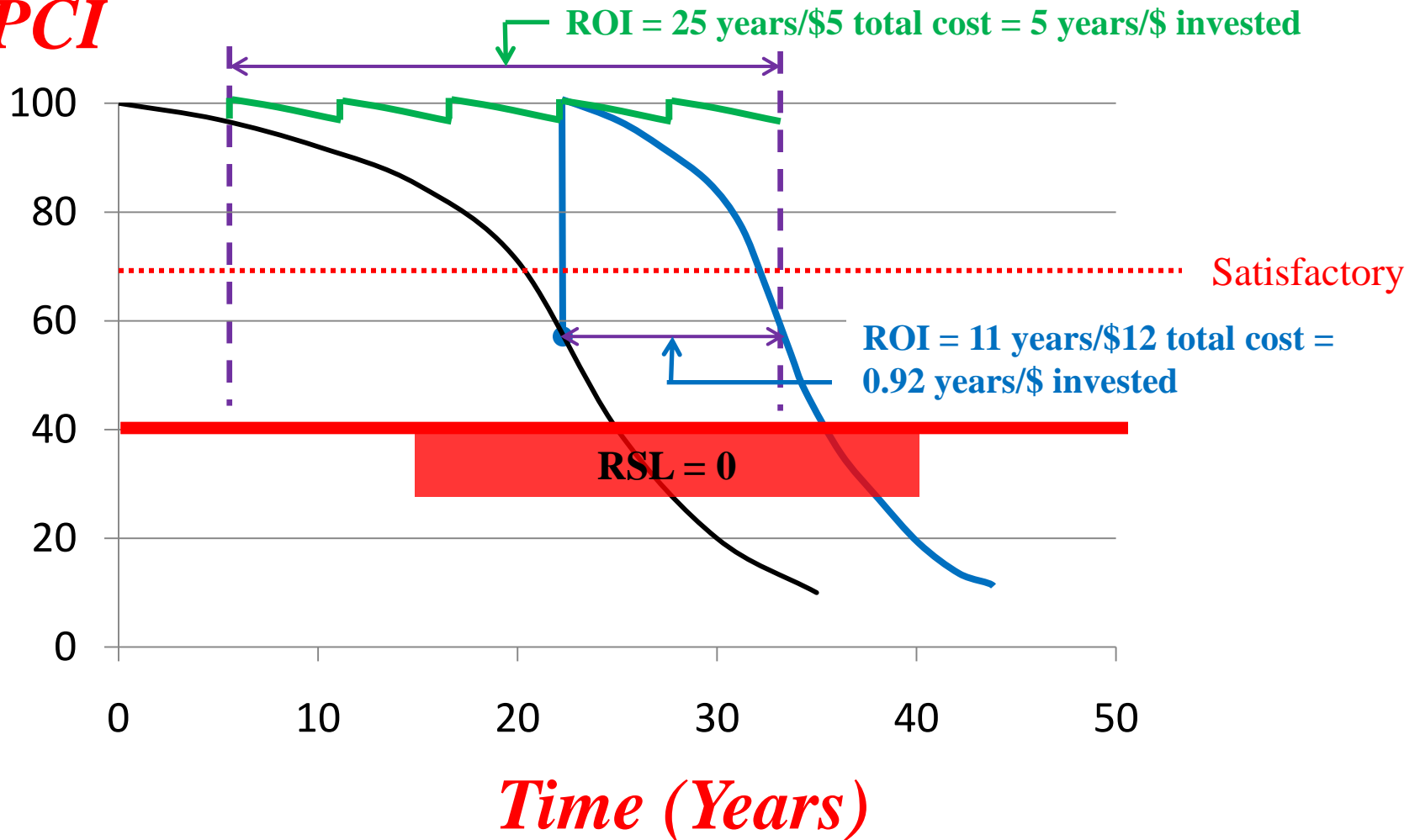
PCI → → → ROI

PCI



PCI → → → ROI

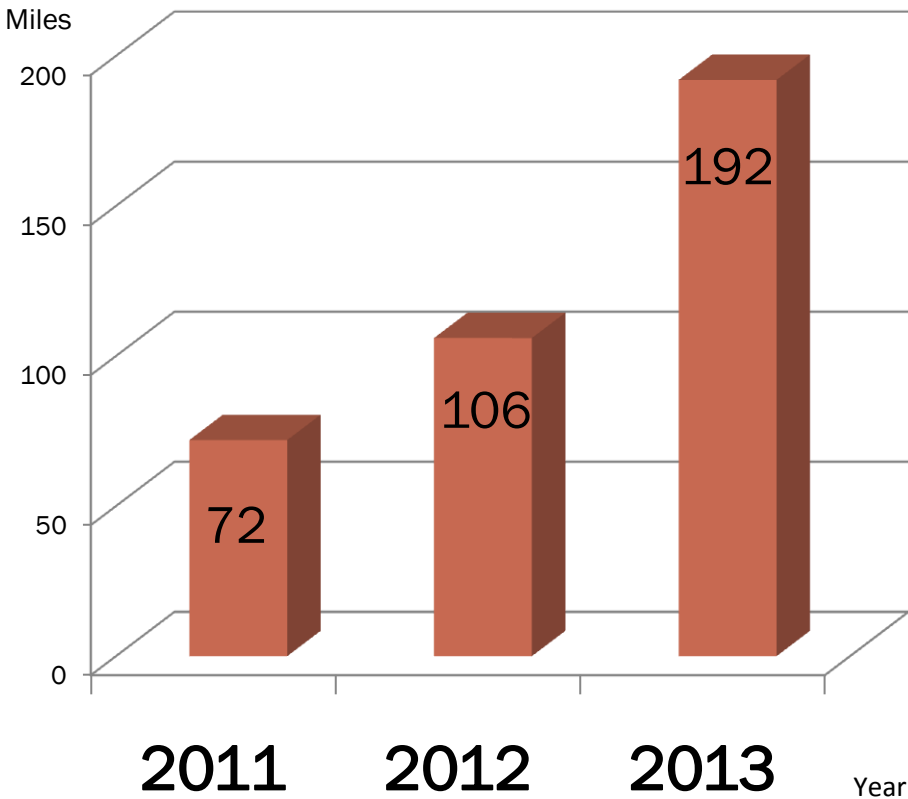
PCI



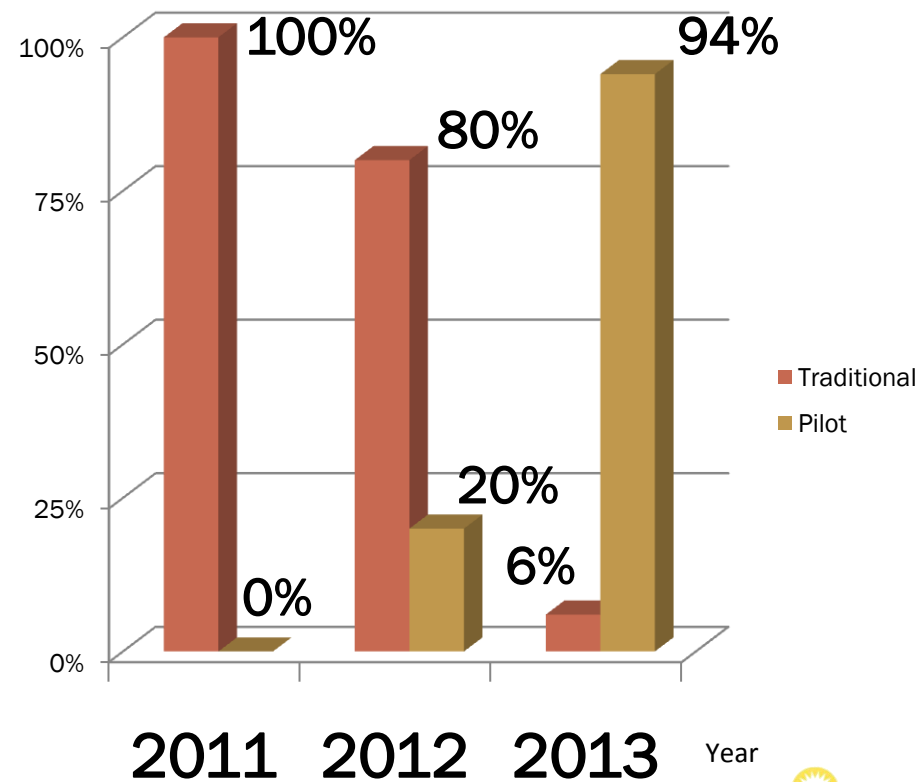
Contracted Maintenance Programs

2011 →→→ 2013

Lane Miles Maintained



Traditional vs. Pilot Approach



2012 CMP Highlights

- Budget pressures prompted a failsafe reduction of \$2 million from CMP general funds
- Revisions were made strategically, on a project-by-project basis
- Significant savings were obtained from the expanded use of mitigation pilot projects (micro surfacing in lieu of mill & overlay), which reduced previously planned construction costs by \$598,259
- An additional \$1,401,741 in savings was obtained from the strategic reduction and/or deferment of previously planned repairs



Micro Surfacing Mitigation

Before

\$3/SY : 5 yrs
1.3 yrs/\$ invested

Micro Surfacing Mitigation

*During
(typical)*

**\$3/SY : 5 yrs
1.3 yrs/\$ invested**

Micro Surfacing Mitigation

After 1 year

$\$3/\text{SY} : 5 \text{ yrs}$
 $1.3 \text{ yrs}/\$ \text{ invested}$

2013 CMP Highlights

- Doubling down on 2012's successes, with a dramatically expanded pilot approach
- Pilot projects range from the use of entirely new treatments (like cape seal), to the incorporation of new material requirements in longstanding treatments
- Anticipate an 81% increase in lane miles maintained, compared to 2012



Cape Seal (New Treatment)



Before

\$5/SY : 8 yrs
1.6 yrs/\$ invested

Cape Seal (New Treatment)

*During
(Asphalt Emulsion)*

\$5/SY : 8 yrs
1.6 yrs/\$ invested

Cape Seal (New Treatment)



*During
(Aggregate Placement)*

**\$5/SY : 8 yrs
1.6 yrs/\$ invested**

Cape Seal (New Treatment)

*During
(Before Sweeping)*

\$5/SY : 8 yrs
1.6 yrs/\$ invested

Cape Seal (New Treatment)

*During
(After Sweeping)*

\$5/SY : 8 yrs
1.6 yrs/\$ invested

Tyler, North of Central

Cape Seal (New Treatment)

*During
(After Micro Surfacing 1 Lane)*

\$5/SY : 8 yrs
1.6 yrs/\$ invested

Preservative Seal (Roller Compaction Pilot)



Before

\$1/SY : 5 yrs
5 yrs/\$ invested

Preservative Seal (Roller Compaction Pilot)



*During
(Emulsion Application)*

$\$1/\text{SY} : 5 \text{ yrs}$
 $5 \text{ yrs}/\$ \text{ invested}$

Mt. Vernon east of Arkansas River

Preservative Seal (Roller Compaction Pilot)



*During
(Roller Compaction)*

*\$1/SY : 5 yrs
5 yrs/\$ invested*

Preservative Seal (New Treatment)

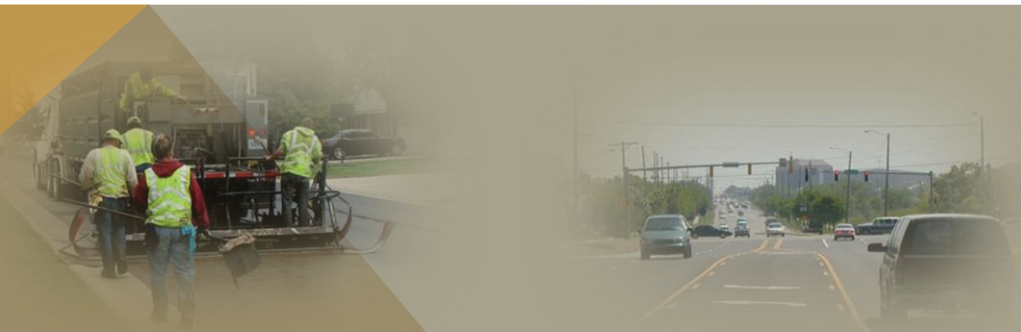
After

**\$1/SY : 5 yrs
5 yrs/\$ invested**

Mt. Vernon east of Arkansas River

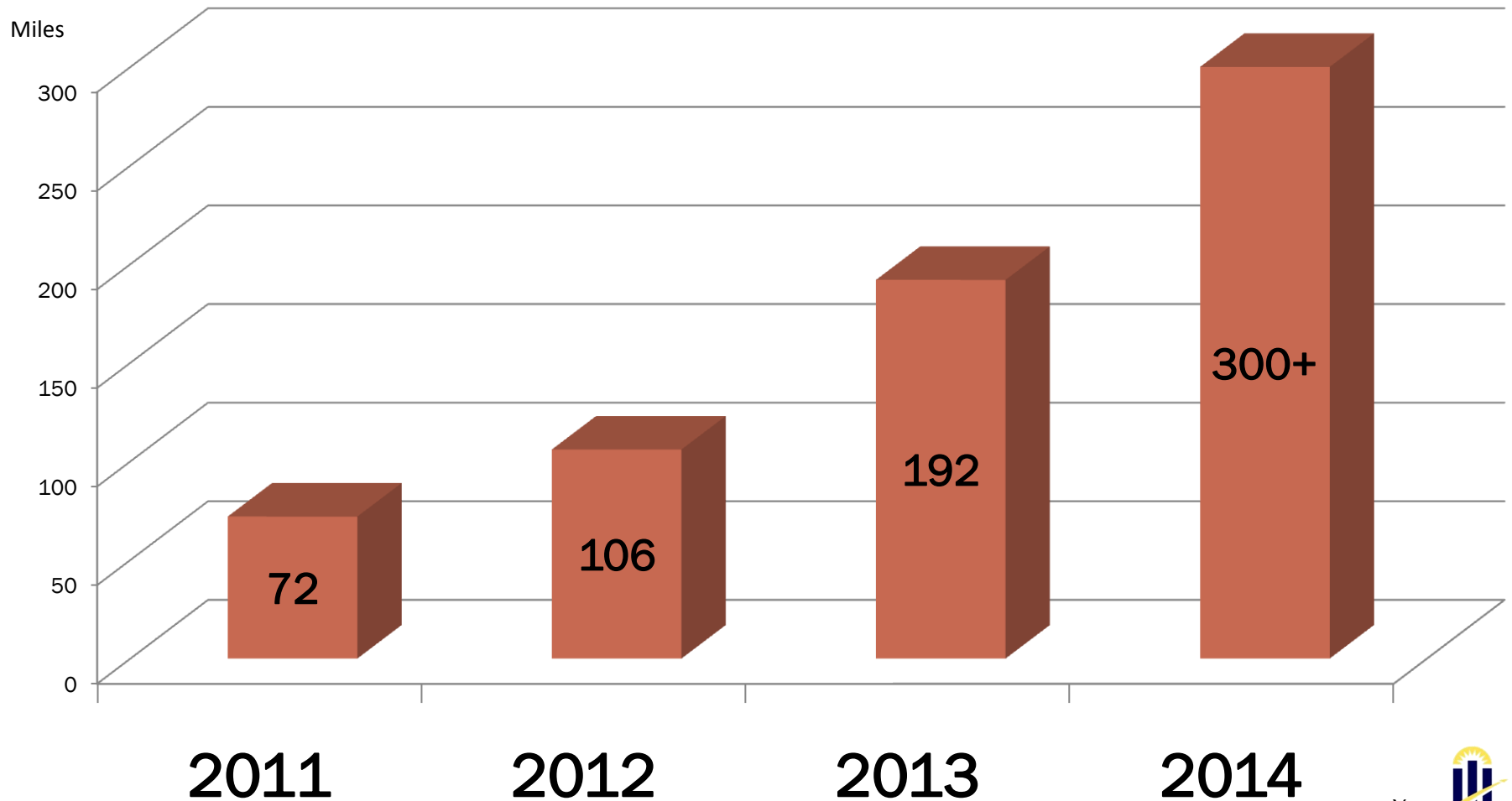
2014 CMP Highlights

- Funding is scheduled to grow to \$8 million, a 33% increase over the historical level of \$6 million
- Proposed expenditures will be significantly focused on residential streets
- Proposed approach will center on thermal crack repair in neighborhoods, City-wide
- A significant increase in treated lane miles is anticipated



2014 CMP

Lane Miles Maintained per Year



Thermal Crack Repair (New Material)



Before

\$1.02/SY : 7 yrs
6.84 yrs/\$ invested

Keith St., NW of 21st & Tyler

Thermal Crack Repair (New Material)



During
(2-inch mill)
\$1.02/SY : 7 yrs
6.84 yrs/\$ invested

Keith St., NW of 21st & Tyler

Thermal Crack Repair (New Material)



*During
(Interlayer Reinforcement)*

\$1.02/SY : 7 yrs

6.84 yrs/\$ invested

Keith St., NW of 21st & Tyler

Thermal Crack Repair (New Material)



*During
(2-inch Asphalt Placement)*

\$1.02/SY : 7 yrs

6.84 yrs/\$ invested

Keith St., NW of 21st & Tyler

Thermal Crack Repair (New Material)



After Compaction

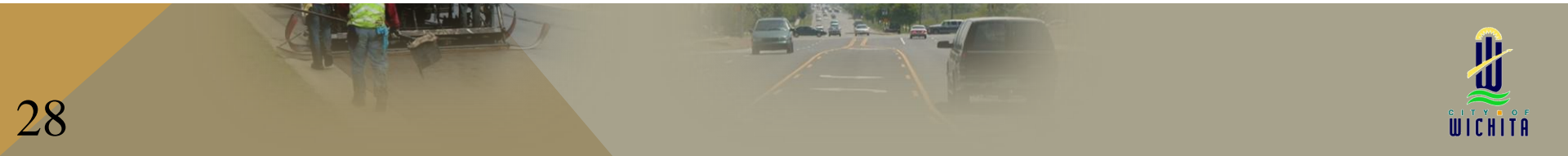
\$1.02/SY : 7 yrs

6.84 yrs/\$ invested

Keith St., NW of 21st & Tyler

Life Cycle Model Development

- Model development will continue into 2014
- 2015 budget discussions will include:
 - The short and long term results of the department's traditional strategy and budget
 - The strategy and budget required to maintain current condition and asset values over time
 - The strategy and budget that results in the optimum ROI over time



Questions?

